DOCUMENT RESUME

ED 149 709 HE 009 628

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TITLE Georgia State University Spending Patterns and the Atlanta Economy.
INSTITUTION Georgia State Univ., Atlanta. Office of Institutional Planning.
REPORT NO GSU-77-8
PUB DATE Dec 76
NOTE 36p.

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS *Area Studies; Bibliographies; College Faculty; College Students; *Consumer Economics; *Economic Factors; *Economic Research; Higher Education; Income; Institutional Research; Merchants; Metropolitan Areas; Purchasing; Questionnaires; Research Projects; *School Community Relationship; *Statistical Analysis
IDENTIFIERS Georgia (Atlanta); *Georgia State University

ABSTRACT

The single but substantial economic dimension of Georgia State University's contribution to the Atlanta metropolitan area is examined in this research report. The purpose of the study was to identify successful estimating techniques developed by previous studies of the local spending impact of postsecondary educational institutions. Three direct spending sources associated with Georgia State are considered: (1) the direct purchase of goods and services needed for the university's day-to-day operations; (2) the spending patterns of the faculty and administrative staff; and (3) the spending patterns of the student body. Since the university's total economic impact on the city is some multiple of its initial, direct channels of spending, this study also establishes a standard method of computing the multiplier value so that the university's total spending impact may be estimated on a timely basis at future dates. A literature review introduces the study. A bibliography, computation methods, and questionnnaires are also included. (LBH)

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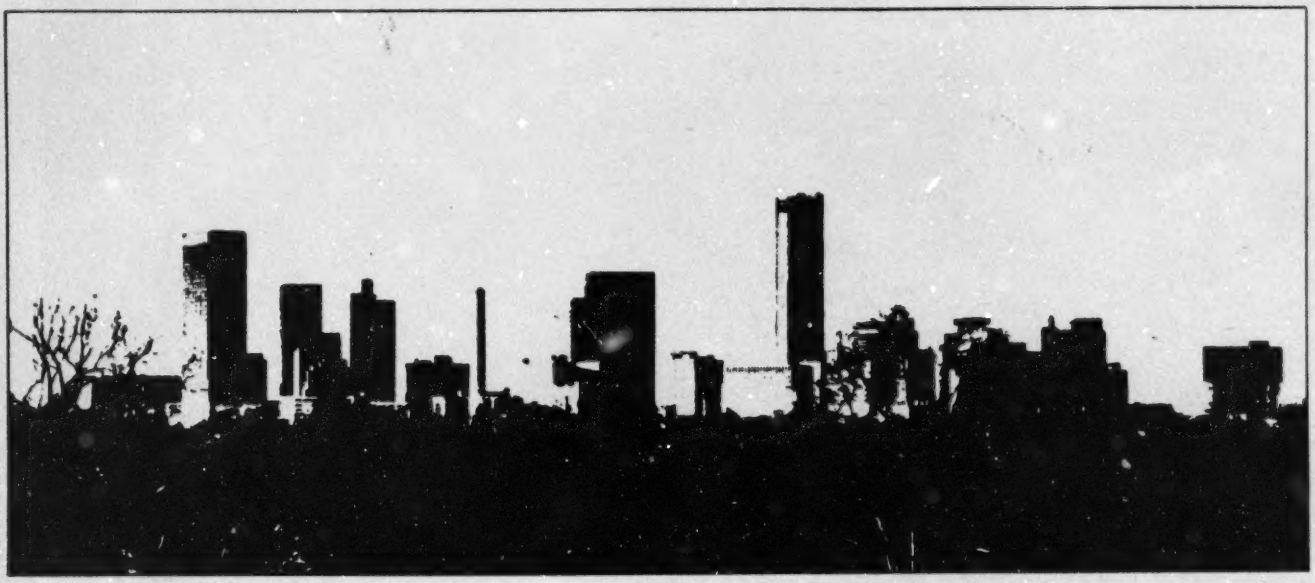

Georgia State University Spending Patterns and the Atlanta Economy

by Charles D. Salley

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HE009685

Report No. 77-8
Office of Institutional Planning
Georgia State University
December, 1976

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December, 1976

ACKNOWLEDGMENTS

The following individuals served as an advisory committee for the project:

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Acknowledgement is made to Dr. James E. Prather and Mr. John E. Williams, Office of Institutional Planning. They co-authored with me the earlier study that provided the basis for this report.

HIGHLIGHTS

In the course of pursuing its primary educational and cultural aims, Georgia State University provides the Atlanta area with a substantial extra dividend of jobs and income.

The initial sources of this positive economic impact are the university's local purchases, the payroll spending of its faculty and staff, and spending by students drawn to the local area by the university. This study estimates the level of these direct sources of economic stimulus using techniques developed in similar inquiries at other post-secondary educational institutions.

University-related direct spending does not fully measure GSU's influence on Atlanta's economic activity, however. These initial purchases induce additional rounds of local spending. Consequently, the university's total economic influence is some multiple of the level of direct spending.

Using a model which avoids both the oversimplified structure of aggregate location quotient models and the massive data requirements of input-output models, the study estimates a spending multiplier of 1.48. (The tabular presentation lends itself to periodic updating of the actual dollar estimates.)

* Forty-six percent of the student body live in the Atlanta area largely because of their enrollment in Georgia State University.

* The average student annually spends $6,455 in the local economy.

* Faculty and staff members each spend locally an average of $8,419.

* The University's direct local purchases amounted to $7,138,952 in fiscal 1976.

* Direct spending from these three sources totaled $79,767,793. The figure is conservative since it omits spending by part-time employees and most part-time students.

* Using the 1.48 multiplier value, the estimate of Georgia State University's total spending impact on the 15-county Atlanta metropolitan area is $118,056,334.

* Georgia State University directly provides 1893 full-time jobs and 1412 part-time jobs. University-related spending generates an additional 2936 full-time positions in the Atlanta community.

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I. INTRODUCTION

The unversity plays many roles in the community in addition to its intended purpose. Incidental to its primary aims of educating people and extending the boundaries of existing knowledge, the university also broadens the local social and political environment and, simultaneously, provides jobs and considerable income.

Interest in estimating this latter economic impact of universities and other non-profit institutions has surged in the past five to ten years. Much of this interest reflects an increase in community concern for possible undesirable fiscal effects that these institutions might have on the local area. Concern about the increase in locally provided public services necessitated by the presence of such facilities, coupled with their tax exempt status, is a typical factor.

Economic impact studies became the vehicle to promote the positive attributes of nonprofit institutions for the local area. In the case of universities, the relatively narrow emphasis of economic benefits results from the difficulty in translating long-run benefits such as expanded cultural activity and improved human resources into concrete measures. Conversely, the university's immediate contribution to the community in terms of new employment and income can be empirically examined.

The present study estimates this single yet substantial economic dimension of Georgia State University's contribution to the Atlanta metropolitan area. Although the study does not consider negative influence on local income such as tax-exemption, neither does the study attempt to measure Georgia State University's positive influence on the growing pool of managerial,

teaching, and research talent that makes Atlanta a regional trade center. While the latter is difficult to measure, its overshadowing importance very likely makes the study's narrow estimate of positive economic impact a conservative one.

II. PURPOSE

The purpose of this study is to identify successful estimating techniques developed by previous studies of the local spending impact of post-secondary educational institutions. The eventual purpose is to use these techniques to give interested members of the Atlanta community a clear picture of the sizeable contribution the university makes to Atlanta in the way of jobs and income.

This immediate and tangible impact on Atlanta flows from three direct spending sources associated with Georgia State University. The first of these is the direct purchase of goods and services needed for the university's day to day operations. The second is the spending patterns of the university's faculty and administrative staff. And the third primary channel of economic impact is the spending patterns of the university's student body. While all institutions affect the local economy by direct purchases and payroll expenditures, this third channel--student spending--is unique to post-secondary educational institutions.

These primary channels of direct spending, although substantial, do not give a complete picture, however. Because of the interdependence of a high-consumption mass-production economy, every dollar of final good purchase sets in motion a flow of income to the chain of activity provid-

ing this final purchase. The university's total economic impact on Atlanta is thus some multiple of its initial, direct channels of spending. Consequently, the study also establishes a standard method of computing the multiplier value so that the university's total spending impact may be estimated on a timely basis at future dates.

III. REVIEW OF THE LITERATURE

Economic impact studies of colleges and universities first appeared in the mid-1960's. The attached table summarizes the contributions of thirteen such studies published from 1964 to 1976. The list is representative and by no means exhaustive.

A. General Acceptance of the Economic Base Concept

From the initial study on, all have regarded the university as an "export" sector of the local economy. This is because most of a university's income and most of its students' income originates outside the community. To the extent that this non-local source of funds is spent locally, the university provides community income very much like a factory exporting manufactured goods to other areas. In a similar manner, educational and research services are sold to outsiders, even though consumption takes place locally. Thus the university "exports" educational services in much the same manner as a Florida resort "exports" services to winter visitors.

All of the studies estimate the aggregate demand for goods and services in the community resulting directly from expenditures by the university and its faculty and students. The Husson College Study (1967), though, is important since it was the first to use economic analysis to measure the secondary spending induced by the university's initial direct spending.

TABLE 1

Summary Characteristics of Previous Impact Studies

(See Bibliography)

Institution and Year	Major Contribution	Major Shortcoming	Use of a Multiplier
Univ of Bridgeport (1964)	Recognizes the "export" nature of college services	Considers only direct expenditures of university	No
Northern Michigan (1965)	Disaggregates university spending by types of goods	Considers only direct expenditures of university	No
Husson College (1967)	First use of multiplier to estimate induced spending	Derivation of multiplier not specific	Yes (2.0)
Univ of Colorado (1968)	Considers Input-Output Analysis but rejects as too costly	Ignores induced effects of student spending	Yes (1.37)
Univ of Connecticut (1969)	Recognizes cyclical stability of university employment	No report of survey results	No
Univ of Florida (1970)	Justifies all univ. employment as basic. Develops method to determine what portion of student spending is basic (equivalent to univ. employment)	Basic employee equivalents of student spending are biased upward	Yes (1.4)
Wisconsin State Univ (1970)	Estimates future impact based on enrollment projections	Derivation of multiplier not specific	Yes (2.0-2.3)
Univ of Alabama (1971)	Illustrates upward bias of aggregate employment multipliers	Unusually high multiplier resulting from aggregate approach	Yes (4.35)
Idaho State Univ (1971)	First attempt to disaggregate student spending	Sample design led to considerable bias	No
Eastern Kentucky Univ (1971)	First use of student spending diaries	Derivation of multiplier not specific	Yes (1.75)
Univ of Pittsburgh (1972)	Comprehensive data collection	No independent estimate of multiplier	Yes (2.0)
Kent State Univ (1973)	Specific calculation of university sector multiplier	Assumes university multiplier and service sector multiplier are same	Yes (1.09)
Georgia State Univ (1976)	Specific calculation of alternative multiplier models	Does not consider negative tax impact or positive human capital impact	Yes (1.22-1.78)

The concept introduced is economic base theory and the local multiplier.

The underlying idea of economic base theory is regional specialization. The division of labor and a corresponding degree of specialization is a prominent characteristic of advanced economies. Great increases in productivity result when each participant in the economy concentrates his productive energy in a single specialized activity where he has a natural or trained ability. One consequence, though, is a high degree of interdependence. Specialized production activity is dependent on other specialized processes for inputs at their own stage of production. Their output, in turn, is necessary for the next higher level of production leading toward final consumption in the consumer sector.

Similarly, geographic areas often contribute to increased productivity through specialization. The specialization may result from some indigenous talent of the local population or from a local endowment of natural resources such as soil or minerals. Specialization may also be the result of a location that has special relevance to a market area or that serves as a transportation center or transfer point, say from water to rail or other land transportation.

An area's economic base consists of these specialized activities that produce for a demand that exceeds local consumption, that is, activities that involve sales to firms located elsewhere.[1] Such activities produce an inflow of money income from non-local sources. The non-local income then makes its way as wages and purchases into local trade and service activity.

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[1] See "Location Theory and Regional Economic Growth," Douglas C. North, Journal of Political Economy, Vol. 63 (June 1955), pp. 243-258, and The Community Economic Base Study, Charles M. Tiebout, New York: Committee for Economic Development, 1962.

A sector of economic activity is basic, then, in the sense that other local income streams depend upon its productivity. The university is such a base sector.

B. Proportion of Total University and Student Spending Viewed as Basic

The University of Florida study (1970) points out that an initial difficulty with the export-base concept lies in properly classifying basic (export) and service industries.

The study examines the objection that the number of university employees attributed to the base sector should be limited to the ratio of funds from non-local sources to total university funds. For instance, if eighty percent of the university's funds come from non-local sources, only eighty percent of the university's employment may be considered basic. On the other hand, the study points out, if local expenditures for education would be spent elsewhere in the absence of the university, then local educational services represent a decrease in the community's imports (import substitution). Thus, all local university spending and employment may be classified as basic.

The study also introduces a method for determining what proportion of student expenditures may be considered basic, or equivalent in its impact to direct university employment. The study's method of computing these "employee equivalents," i.e., the number of local full-time jobs directly supported by student spending, is upwardly biased, however. This is because items students purchase are not produced entirely within the local economy. Wilson and Raymond corrected the method of computation in 1973.[2]

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[2] J. H. Wilson and R. Raymond, "Economic Impact of a University on the Local Community," Annals of Regional Science, December, 1973, p. 137.

A more accurate estimate is obtained by multiplying the amount of total student spending in each sector, i.e., housing, food, etc., by the local sales per employee ratio for the respective sector. (See Appendices F-1 and F-2, "Calculation of Employee Equivalent").

C. Sample Design for Student and Faculty/Staff Direct Spending Surveys

The Idaho State University study (1971) estimates the level of student spending by surveying entire class sections selected randomly. Previous studies had drawn a random sample directly from the entire student body. This study raises the question of correct sample design for the spending surveys. Wilson and Raymond (1973) suggest that a proportional stratified sample produces a less biased estimate of the population's spending than other methods. (See Appendix B-3, "Estimation of Student Spending.")

D. Multiplier Estimation of Induced Spending

The studies which calculate a multiplier value approach the problem in a conceptually identical manner, while seeking increasingly accurate methods of calculation.

The simplest model drawn from this literature views the amount of induced spending as proportionate to the ratio of base sector employment (or spending) to total employment (or spending). This aggregate location quotient multiplier is easily calculated, but it has the drawback of using a single multiplier for the entire community. The separate sectors of the basic portion of the local economy may well have different spending patterns. If this is the case, each sector would then have different initial income and employment effects.

To overcome this drawback, the Kent State study (1973) suggests computing a separate multiplier at least for the university portion of the

export base. This approach produces an assessment of spending impact more closely tailored to the university's spending pattern than does the aggregated export-base multiplier.

S. R. Breslar (1974) refines the Kent State model by recognizing the distinction between the initial spending pattern of the individual export sector (the university) and the respending pattern of local consumers. The limiting case of this type of disaggregation is the input-output model which uses separate spending patterns for every sector. The Breslar model represents a happy medium by recognizing that while the initial spending impact of a university may differ substantially from the initial impact of, say, an automobile assembly plant, the induced respending by local consumers may be more similar and thus more reliably aggregated.

This model first estimates the initial university-related spending impact based on the pattern of university purchases. Local value-added figures used in the computation are calculated from local payroll/sales data. The model then estimates the aggregate respending ratio on the basis of general retail purchase value-added.

This approach accounts for large variations in initial spending patterns of base sectors, while avoiding the immense data requirements of a full input-output model to estimate the institution's full impact. The final multiplier in this model is a ratio of the value added by initial university-related spending and the value added by induced consumer respending. (See Appendix E, "Computation of a Differential Expenditure Multiplier").

E. Resolution of Methodological Problems

Early studies estimating the impact of a university on the local economy supplied simple descriptive summaries of direct university employ-

ment and student spending. A later group of studies (1967-76) applied the concepts used in economic base analysis to the situation of the university. However, many of these studies developed economic base multipliers and sampling techniques that overestimated the university's impact on secondary spending.

After reviewing these studies and the various multiplier models and their application to this institution[3], the Advisory Committee agreed with the author that the overestimation typical of other impact estimates should be corrected:

> by use of a proportional stratified sample design for student and faculty spending surveys;
>
> by considering a portion of student spending as export (basic) income and computing "employee equivalents" (i.e., base sector employment) attributable to student spending; and
>
> by using local value added data to compute a differential multiplier that is a ratio of initial university-related spending and induced consumer respending.

IV. PLAN OF THE STUDY

The estimation of the university's economic impact proceeds in six distinct phases:

(1) Collection of direct university enrollment, payroll and spending data.

(2) Survey and estimation of student spending.

(3) Survey and estimation of faculty/staff spending.

(4) Calculation of the local multiplier

(5) Calculation of employee equivalent of student spending.

(6) Computation of the university's total impact on local income and employment.

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[3]For a more complete examination of the various multiplier models see the Office of Institutional Planning Report No. 77-5, "A Review of Economic Multipliers for Post-Secondary Institutions with Selected Models Applied to Georgia State University".

The Business Office provided state funds expenditure data for the fiscal year 1976. The data which was initially classified by university expense code, was regrouped to correspond to the Standard Industrial Classification used by the Department of Commerce. This was necessary because virtually all Department of Commerce local value-added and sales-payroll ratios are published only for the SIC code industry groups.

The Business Office also provided gross and net payroll figures for the fiscal year for full-time and part-time employees. The number of employees by category and the number of students by category came from the Office of Institutional Planning. (See Appendix A, "Initial University Data.")

The Office of Institutional Planning conducted a questionnaire survey of student spending patterns and of faculty/staff spending patterns. A random sample of the student body produced 1,210 complete responses and a 100 percent faculty/staff survey produced 1,108 complete responses. Population estimates were then calculated from these results. (See Appendices B-3 and C-3).

Next, the local multiplier value was calculated. The calculation proceeds in three steps. First the payroll/sales ratio used as a proxy for local value added is calculated from census data. Next, the initial impact of local university purchases is calculated using the value added figures obtained in the first step (Appendix D). The multiplier value is then calculated using the local purchase impact figure from the second step, the gross payroll figure from Appendix A, and the results of the faculty/staff spending survey (Appendix E).

The employee equivalent of student spending was next calculated in

order to assess the university's impact on local employment (Appendices F-1 and F-2). Finally, the total impact of the university's spending on local income and employment was calculated using the local multiplier value. These results are summarized in section V.

V. RESULTS

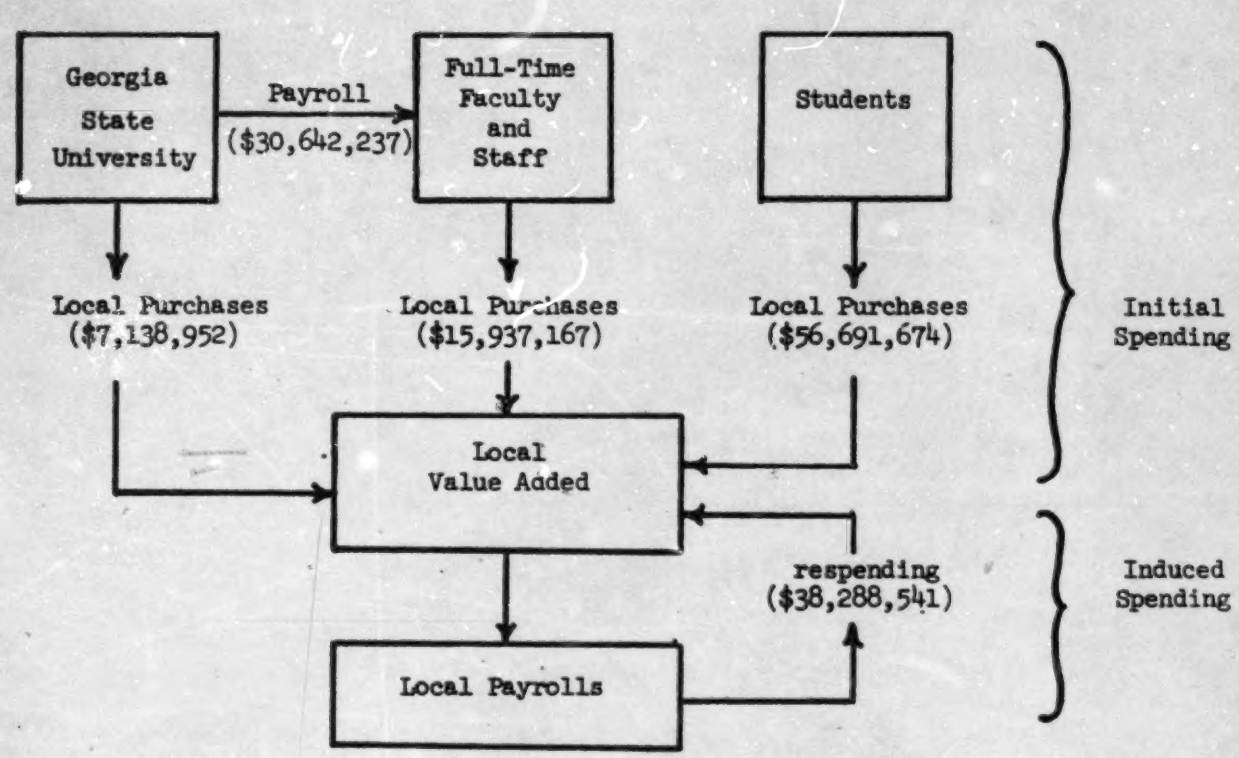
The university's initial spending impact comes from three sources, local purchases by the university, local faculty/staff spending of the university payroll, and local spending by students whose activity in Atlanta is directly attributable to their enrollment at Georgia State University.

Local purchases during fiscal 1976 total $7,138,952. This amount is virtually the total of all purchases since the university is located in the regional wholesale supply center and very few purchases are made outside the area. Purely non-local initial purchases are limited to periodical subscriptions and some travel expenses. All local orders, of course, do not produce additional local income if the actual materials are manufactured elsewhere. The local value-added ratios account for this income leakage, however.

Annual local spending by faculty and staff members is estimated to be an average of $8,419. Total local spending by 1,893 full-time employees is, then, $15,937,167. There are an additional 1,412 part-time employees. Although their spending patterns are similar to full-time employees, their local purchases cannot be attributed entirely to the university as payroll records indicate that only $1,025,208 was paid out to part-time personnel. Most of their income, apparently, derives from other sources.

Annual local spending by students is estimated to be $6,455.44 on average. Since many students are professionally employed in Atlanta and are inci-

LOCAL SPENDING PATTERNS



dentally enrolled in Georgia State University on a part-time basis, all student spending is not directly attributable to the university. Questionnaire responses, though, indicate that forty-six percent of the student body are living in the Atlanta area because of their enrollment in Georgia State University. Either they have moved to the area to attend this school, or they would have moved elsewhere to attend school if Georgia State University were not located in the Atlanta area. A total of 8,782 students fall in this category. Their spending is $56,691,674.

Total initial university spending from these three sources amounts to $79,767,793. The figure is conservative because it omits spending by part-time employees and most part-time students. To obtain the total local expenditure figure, this amount is increased by the local multiplier:

$$(1.48) \times \$79,767,793 = \$118,056,334$$

Total local employment is estimated similarly. Initial employment is 3,263, consisting of the 1,893 full-time employees plus the 1,[illegible] initial full-time jobs attributable to student spending (Appendix F-2). To obtain the total employment impact figure, this level is increased by the local multiplier. Using the estimator, 1.48, a total of at least 4,829 jobs in the Atlanta area may be attributed to Georgia State University.

VI. SUMMARY AND CONCLUSION

During the 1960's and early 1970's, economic impact studies became the vehicle to promote the positive attributes of nonprofit institutions for their local areas. Post-secondary educational institutions were prominent among these. A series of studies appeared calling attention to the substantial dividend of jobs and income the university provides its local community in

the course of pursuing its primary educational and cultural aims.

Succeeding studies resolved conceptual problems dealing with the manner in which university-related spending enters the local income stream. Three channels were identified--direct university purchases, the university payroll, and, peculiar to the case of educational institutions, spending by the student body. The series of studies also resolved problems related to accurate estimation of the extent that faculty and staff spend payroll funds locally and the amount students spend locally.

Developing accurate methods to estimate these channels of direct university-related spending did not complete the picture, however. Because of the interdependence of a high-consumption mass-production economy, every dollar of final product purchase sets in motion a flow of income to the chain of activity providing the final purchase. The university's total impact is thus some multiple of its initial direct spending.

Most of the studies approached the problem of multiplier estimation in a conceptually identical manner, although each sought to achieve an increasingly accurate method of calculation. All employed the concept of the community economic base whose initial income induces several rounds of additional local spending. The first type model drawn from this literature views the amount of secondary spending simply as proportionate to the ratio of basic to total employment. Although this aggregate is easily calculated, the necessary simplifying assumptions can lead to great overstatement of economic impact, especially in rapidly growing areas where the base sectors are shifting. Using this method, some studies calculate multiplier values as high as 4.35.

A second type model used in these studies is less aggregated than the first and recognizes the more individual spending pattern of the university base sector. The multiplier is computed from the local value-added of specific sectors in proportion to university spending in each of these sectors. However, even though the model computes the initial local spending impact peculiar to the university, it suffers the drawback that subsequent respending by all local persons are presumed to have the same pattern as the university.

A third type model, a differential value-added multiplier (Appendix E), is a refinement of the second model. As the name indicates, two different multipliers come into play--an initial local spending ratio unique for university patterns, and a second local spending ratio for subsequent rounds of respending. This multiplier is used in the present study as it avoids both the oversimplified structure of the aggregated model and the massive data requirements of a fully disaggregated input-output model.

The calculated multiplier value for Atlanta is 1.48. This value is within the 1.20 - 1.50 range that the American Council on Education recommends for university economic impact studies.[4]

As the initial university-related spending totaling $79,767,793 for fiscal 1976 is a conservative figure which omits spending by part-time employees and most part-time students, using the 1.48 multiplier produces a reliable, in the sense of minimum, estimate of total spending impact on the 15-county Atlanta area. This figure is $118,056,334.

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[4] J. Caffery and H. Isaacs, Estimating the Impact of a College or University on the Local Economy, Washington, D. C.: American Council on Education, 1971, pp. 45-45.

The same multiplier, together with the calculation of employee equivalents of student spending, attributes a total of 4,829 Atlanta jobs to Georgia State University's spending. Again, any error in the estimates of both the expenditure impact and employment impact are on the conservative side.

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APPENDICES

A. Initial University Data
B-1. Cover Letter - Student Survey
B-2. Student Spending Questionnaire
B-3. Estimation of Student Spending
C-1. Cover Letter - Faculty/Staff Survey
C-2. Faculty/Staff Questionnaire
C-3. Estimation of Faculty/Staff Spending
D. Calculation of Initial Impact by University Purchases Using Local Value Added
E. Computation of a Differential Expenditure Multiplier Using Local Value Added
F-1. Atlanta SMSA Sales/Employee Ratios
F-2. Calculation of Employee Equivalent

Appendix A

INITIAL UNIVERSITY DATA

1. Student Population (Spring Quarter, 1976)

	Male	Female	Total
Freshmen	1,209	1,527	2,736
Sophomore	1,179	1,220	2,399
Junior	1,604	1,326	2,930
Senior	2,066	1,626	3,692
Graduate	3,377	3,958	7,335
TOTAL	9,435	9,657	19,092

2. Faculty/Staff Population (5/31/76)

	Full-Time	Part-Time
Faculty	791	271
Staff	1,102	1,141
TOTAL	1,893	1,412

3. Total Local University Expenditures = $7,138,952

4. University Payroll for Fiscal Year 1976

Gross	$31,667,445	($30,642,237 full-time employees)
Federal Tax	(4,492,505)	
State Tax	(827,051)	
FICA	(1,319,393)	
Other Deductions	(3,115,765)	
TOTAL	$21,912,730	

Appendix B-1

GEORGIA STATE UNIVERSITY
33 GILMER STREET, S. E. • ATLANTA, GEORGIA 30303

April 16, 1976

The Development Office, Office of Institutional Planning, and School of Business Administration are assessing Georgia State University's economic impact on the Atlanta metropolitan area. The impact study should give interested members of the Atlanta community a clearer picture of the considerable contribution of the university in the way of jobs and income to Atlanta.

One source of the impact of the university on local employment is the spending patterns of Georgia State students. Would you please help us identify these spending patterns by allotting about ten minutes of your class time toward the completion of a student questionnaire.

A representative of the Office of Institutional Planning will conduct the survey in your classroom. Please call Mr. John Williams at 658-2570 if you have questions. Thank you for your help.

Sincerely,

Ralph Beck
Assistant Vice President for Development

/pae

Please indicate when we may conduct the survey in your class week April 26-30:

Day	Time	Classroom & Building	Number of Students
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Appendix B-2

STUDENT QUESTIONNAIRE

1. How long have you been living in the Atlanta area? _____ (years)

2. What year were you first enrolled as a G.S.U. student? _____

3. What is your current age? _____

4. Class: Freshman _____ Junior _____ Graduate _____
   Sophomore _____ Senior _____ Other _____

5. Female _____ Male _____

6. Married _____ Single, Divorced, Widowed _____

7. Full-Time Student _____ Part-Time Student _____

8. G.S.U. location in Atlanta influenced your decision to live in the Atlanta area, _____ Greatly, _____ Somewhat, _____ Not at all.

9. What do you spend each quarter for tuition and fees? _____
   Books and supplies? _____

10. Please estimate your average monthly expenditures:

	Within 15-County Atlanta Metro Area
Rent or house payment	$_____
Utilities (gas, lights, telephone, etc.)	_____
Food consumed at home & household items	_____
Eating Out (restaurants, hamburger stands, etc.)	_____
Entertainment (sports, concerts, movies, etc.)	_____
Automobile (payment, repairs, gas, insurance)	_____
Other Transportation (bus, carpooling, etc.)	_____
Clothing	_____
Personal Services (hair, laundry, repairs)	_____
Health Services (including insurance)	_____
Furniture & Appliances	_____
Other	_____

Appendix B-3

ESTIMATION OF STUDENT SPENDING (SPRING 1976)
STRATIFIED RANDOM SAMPLE*

		Percent Distribution						
		Male	Female	Freshman	Sophomore	Junior	Senior	Graduate
Student Population	(19,092)	49.4	50.6	14.3	12.6	15.3	19.3	38.4
Student Sample	(1,210)	47.6	52.3	9.1	11.0	20.4	23.3	34.9

Spending Category	Sample Annual Average	Weighted Annual Average†
Books	$ 166.04	$ 163.72
Housing	1691.52	1719.72
Utilities	424.32	431.04
Food and Household	1100.88	1110.48
Eating Out	439.68	439.92
Entertainment	307.80	306.00
Automobile	962.28	960.60
Other Transportation	68.76	64.68
Clothing	371.88	372.72
Personal Services	187.20	183.60
Health Services	284.40	282.48
Furniture	133.80	137.16
Other	281.64	283.32
TOTAL	$6420.20	$6455.44

*Reference: Wonnacott, T. H. and R. J. Wonnacott, Introductory Statistics for Business and Economics, John Wiley and Sons, 1972, p. 529

†Weighting factors are the ratios of total population enrollment for each class to the total for all classes, i.e., 14.3% for freshmen, 12.6% for sophomores, etc. Factors are based on class rather than sex because the deviation of the population and sample distribution is greater by class.

Appendix C-1

GEORGIA STATE UNIVERSITY
33 GILMER STREET, S. E. • ATLANTA, GEORGIA 30303

April 16, 1976

MEMORANDUM TO: Faculty and Administrative Staff

At the Provost's direction, the Development Office, Office of Institutional Planning, and School of Business Administration are assessing Georgia State University's economic impact on the Atlanta metropolitan area. The impact study should give interested members of the Atlanta community a clearer picture of the considerable contribution of the university in the way of jobs and income to Atlanta.

One source of the university's impact on local employment is the spending patterns of the faculty and administrative staff. Would you please help us identify these patterns by completing the attached questionnaire. Procedures have been adopted which will insure that personal anonymity is maintained. There is no interest in identifying individuals or the spending habits of particular people.

You may find that consultation with other members of the household will be helpful in estimating some of the values requested. Even a rough approximation will be helpful in the overall estimation of these impacts.

Thank you for your cooperation. The questionnaires can be returned through campus mail.

Sincerely,

Ralph Beck
Assistant Vice President for Development
Chairman, Economic Impact Study Committee

/pae
Enclosures

Appendix C-2

FACULTY/STAFF QUESTIONNAIRE

The following items are intended to help estimate the economic impact of Georgia State University on the Atlanta metropolitan area.

A. What is your primary employment status at Georgia State University?

_____Full-time faculty
_____Part-time faculty
_____Full-time staff
_____Part-time staff

B. In what type of housing do you reside?

_____Rent
_____Own home

C. What is the zip code of your current address? _____

Please estimate your average monthly expenditures:

D. Rent or house payment (include condo. maintenance fee) $_____
E. Utilities (water, gas, lights, telephone) _____
F. Food consumed at home & household items _____
G. Eating out (restaurants & fast-food establishments) _____
H. Entertainment (theatre, sports, concerts, etc.) _____
I. Automobile (payments, repairs, gas, insurance) _____
J. Other transportation (bus, carpooling, etc.) _____
K. Clothing _____
L. Personal services (laundry, hair, repairs) _____
M. Health services (including insurance) _____
N. Furniture and appliances _____
O. Other _____

PLEASE RETURN TO OFFICE OF INSTITUTIONAL PLANNING VIA INTER-OFFICE MAIL

Appendix C-3

ESTIMATION OF FACULTY/STAFF SPENDING (SPRING 1976)
STRATIFIED RANDOM SAMPLE

		Percent Distribution			
		Full-Time Faculty	Part-Time Faculty	Full-Time Staff	Part-Time Staff
Population	(3305)	23.9	8.2	33.3	34.5
Sample	(1108)	38.8	6.5	38.8	15.9

Spending Category	Sample Annual Average	Weighted Annual Average*
Housing	$2523.00	$2280.96
Utilities	717.36	627.96
Food and Household	1794.12	1576.68
Eating Out	555.36	513.72
Entertainment	307.80	288.24
Automobile	1205.04	1052.64
Other Transportation	75.00	75.48
Clothing	501.84	391.80
Personal Service	280.32	244.56
Health Services	524.64	429.96
Furniture	318.36	246.24
Other	801.84	690.96
	$9606.68	$8419.20

*Weighting factors are the ratios of faculty/staff population in each category to the population total, i.e., 23.9% for full-time faculty, 8.2% for part-time faculty, etc.

Appendix D

CALCULATION OF INITIAL IMPACT BY UNIVERSITY PURCHASES* USING LOCAL VALUE-ADDED RATIOS

(1) Item	(2) Amount of Local Purchase	(3) Industry SIC Code	(4) Value Added Ratio†	(5) Value Added Amount (2) x (4)
Employee Travel and Benefits	$ 320,977	7000	.322	$ 103,355
Taxes and Utilities	1,506,241	--	.397‡	597,978
Trade Purchases (Wholesale and Retail)	3,198,829	5000	.133	425,444
Finance and Insurance	44,081	7300	.366	16,134
Rental	750,617	--	.219‡	164,385
Repair Services	611,436	7600	.372	227,454
Business Services	668,156	7300	.366	244,545
Vehicle Repair and Service	20,516	7500	.219	4,493
Other	18,119	5000	.133	2,410
TOTAL	$7,138,952			$1,786,198

*Adapted from S. R. Bresler, "Multiplier for a Public Program," unpublished dissertation, Georgia State University, 1974, pp. 35-37.

†Atlanta sales-payroll ratios are calculated from data presented in Census of Business, U.S. Department of Commerce 1967, vol. 5, pt. 1, Table 4.

‡J. Wilson, "Economic Impact of a University on the Local Economy," unpublished dissertation, Kent State University, pp. 148 & 153.

Appendix E

COMPUTATION OF A DIFFERENTIAL EXPENDITURE MULTIPLIER* USING LOCAL VALUE ADDED

$$m = 1 + \frac{r}{1 - s}$$ where r = initial spending

s = re-spending ratio

A. Computation of r, the proportion of total university spending that is spent locally.

1. Local consumption by full-time employees (survey) $15,937,167.
2. Gross payroll to full-time local employees $30,642,237.
3. Portion of payroll spent locally (1) ÷ (2) = .520.
   (Proxy for all local payroll spending)
4. Value added by university's local purchases (Appendix D) $1,786,198.
5. Initial local income generated by purchases (3) x (4) = $928,823.
6. Total initial local spending (1) + (5) = $16,865,990.
7. Total university spending (all purchases ÷ 2) $37,761,189.
8. Ratio of initial local spending to total spending
   (6) ÷ (7) = .446.

B. Computation of s, secondary local spending induced by initial local spending.

9. Local value added by total local spending (6) x (.133†) = $2,243,177.
10. Induced local spending (9) x (3) = $1,166,452.
11. Ratio of induced local spending to initial local spending
    (10) ÷ (6) = .069.

C. Computation of multiplier.

12. 1.000 - (11) = .931.
13. (8) ÷ (12) = .479.
14. 1.000 + (13) = 1.479.

*Adapted from S. R. Bresler, "Multiplier for a Public Program", unpublished dissertation, Georgia State University, 1974, pp. 33-46.

†Trade purchases value added, Appendix D, col. (4); Bresler, p. 44.

Appendix F-1

ATLANTA SMSA

SALES/EMPLOYEE RATIOS

(1) Sector	(2) SIC Code	(3) Sales* (000's)	(4) Employees	(5) Sales/Employee (3) ÷ (4)
Books and Supplies	594	$ 10,268	200	$51,340
Food and Household	540	735,269	9,469	77,650
Eating Out	581	251,402	14,056	17,886
Entertainment	780 & 790	120,562	2,860	42,155
Automobile	554-5	1,006,574	11,622	86,609
Clothing	560	183,999	4,594	40,052
Personal Services	720	146,643	9,794	14,973
Health Services	591	127,780	3,019	42,325
Furniture and Appliances	570	146,237	2,434	60,081
Miscellaneous	590	313,965	4,743	66,195
Rent				54,913†
Utilities				15,115†

* Census of Business, U. S. Department of Commerce 1967, vol. 5, pt. 1, Table 4, converted to 1976 prices with index 167 (1967 = 100). See Federal Reserve Bulletin, April 1976, Table A 53.

† J. Wilson, "Economic Impact of a University on the Local Economy", unpublished dissertation, Kent State University, pp. 148 & 153.

Appendix F-2

CALCULATION OF EMPLOYEE EQUIVALENT

(1) Student Spending Category	(2) $ Annual Amount of Local Purchases*	(3) Local Sales/Employee†	(4) Employee Equivalent (2) ÷ (3)
Books & Supplies	$ 1,437,789	$51,340	28.0
Rent	15,102,581	54,913	275.0
Utilities	3,785,393	15,115	250.4
Food & Household	9,752,235	77,650	125.6
Eating Out	3,863,377	17,886	216.0
Entertainment	2,687,292	42,155	63.8
Automobile	8,435,989	86,609	97.4
Clothing	3,273,227	40,052	81.7
Personal Services	1,612,375	14,973	107.7
Health Services	2,480,739	42,325	58.6
Furniture & Appliances	1,204,539	60,081	20.0
Other	3,056,138	66,195	46.2
	$56,691,674		

1370.4
(University Employment Equivalent generated by local student spending)

*Data from Student Spending Survey. Total for only 46% of student population (8782) drawn to Atlanta by Georgia State University.

†Values from Appendix F-1, column 5.

Reference: J. H. Wilson and R. Raymond, "Economic Impact of a University on the Local Community," Annals of Regional Science, (vol. 7) December 1973, p. 141.